What is claimed is:

1. A spool comprising: a hub sandwiched between two flanges, said hub containing at least one living hinge forming a cavity in a periphery of said hub, such that during the temperature variations between –40°C to 85°C

(i) the outer surface circumference of said hub changes, thereby changing the size of the opening associated with said cavity during said temperature change; and

(ii) the outer surface diameter D_H of said hub remains substantially constant.

2. The spool according to claim 1, wherein said spool is made of aluminum.

3. The spool according to claim 1, wherein said spool is made of material with CTE of not less than 14 μin/ in °C.

4. The spool according to claim 3, wherein said spool is made of material with CTE of not less than 20 μin/ in °C.

5. The spool according to claim 1, wherein said spool is made of material with CTE*Modulus of less than 9x10E6.

6. The spool according to claim 5 wherein said spool is made of material with CTE*Modulus of less than 6x10E6.

7. A method for making a spool comprising the steps of:

(i) forming a hub pipe with living hinge;

(ii) cutting off a required length l of this hub pipe, thereby producing a plastic hub of length *l*, the hub having at least one living a living hinge;

(iii) providing two flanges;

(iv) assembling the hub and the flanges into the spool.

8. The method according to claim 7, further including the step of winding fiber around said hub.

9. The method according to claim 7, wherein said step of providing two flanges includes (a) providing at least two flange preforms; and (b) trimming said preforms to a desired size, thereby producing a flanges of desired diameter;

10. A spool comprising: a hub sandwiched between two flanges, at least one of said flanges including at least one smoothly curving arcuate fiber groove on a side facing said hub, said fiber groove extending substantially to the outer edge of said flange, said groove being at a shallow angle θ relative to the tangent line to the periphery of said flange, said angle θ being no more than 15 degrees.

11. The spool according to claim 1, wherein said angle θ is less than 10 degrees.

12. The spool according to claim 2, wherein said angle θ is less than 5 degrees.

13. The spool according to claim 2, wherein said angle θ is less than 3 degrees.

14. The spool according to claim 1, wherein said flange has a plurality of fiber grooves, each of said fiber grooves being characterized by a different bend radius Ri, at least one of said fiber grooves extending at said shallow angle θ substantially to the outer edge of said flange.

15. The spool according to claim 5, wherein said fiber grooves are semicircular and are characterized by different radii of curvature.

16. The spool according to claim 1, wherein said fiber groove allows the exiting fiber to reverse direction, so that fiber leads point in the same direction.

17. The spool according to claim 7, wherein said flange with a fiber groove also contains a fiber underlaying groove.

18. The spool according to claim 1, wherein said flange includes at least two fiber grooves, one of said fiber grooves allows the exiting fiber to reverse direction, so that fiber leads point in the same direction, and another one of said fiber grooves allowing the fiber leads to point in opposing directions.

19. The spool according to claim 1, wherein said side of the flange with the fiber groove also contains a fiber underlaying groove.

20. A method for making a spool comprising the steps of:

(i) providing at least two flange preforms;

(ii) trimming said preforms to a desired size, thereby producing a flanges of desired diameter;

(iii) providing a hub;

(iv) assembling the hub and the flanges into the spool.

21. A method according to claim 11, further including the step of winding fiber around said hub.